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(71) Applicant (for all designated States except US): **AKZO NOBEL N.V.** [NL/NL]; Velperweg 76, NL-6824 BM Arnhem (NL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **VAN DER HORST, Peter, Marten** [NL/NL]; Hagemanswei 92, NL-6843 XN Arnhem (NL).

(74) Agent: **SCHALKWIJK, Pieter, Cornelis**; Akzo Nobel N.V., Intellectual Property Department (Dept. AIP), P.O. Box 9300, NL-6800 SB Arnhem (NL).

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(54) Title: **USE OF CMC IN DRILLING FLUIDS**

(57) **Abstract:** The invention relates to a water-based drilling fluid composition comprising a carboxymethyl cellulose (CMC), wherein the CMC is characterized by forming a gel at 25°C after high-shear dissolution in a 0.3 wt% aqueous sodium chloride solution, the final content of the CMC in the aqueous sodium chloride solution being 1 wt% for a CMC having a degree of polymerization (DP) of >4,000, 1.5 wt% for a CMC having a DP of >3,000-4,000, 2 wt% for a CMC having a DD of 1,500-3,000, and 4 wt% for a CMC having a DP of <1,500, the gel being a fluid having a storage modulus (G') which exceeds the loss modulus (G'') over the entire frequency region of 0.01-10 Hz when measured on an oscillatory rheometer operating at a strain of 0.2.

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